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Appl. No. 10/565,017
November 15, 2007

REMARKS/ARGUMENTS

Claims 1-11 and 13-29 stand rejected in the outstanding Official Action. Applicants have amended claim 1 and added newly written claim 30 and therefore claims 1-11 and 13-30 are the only claims remaining in the application.

In reviewing both the newly cited Jenkins reference and the previously cited GB 2309608 reference, Applicants are of the opinion that original claim 1 clearly distinguishes from both references. It will be recalled that in the Amendment filed March 9, 2007, Applicants cancelled without prejudice claim 12 and added the limitation of claim 12 into independent claim 1. Applicants now believe that the limitation of claim 12 is not needed for claim 1 to clearly define over both the newly cited Jenkins reference (US 5,917,596) and the previously cited Devereux (GB 2 309 608) reference and therefore this limitation has been deleted from the claim. Applicants have offered a new claim 30 dependent upon claim 1 and corresponding to original claim 12.

Entry of the amendment under the provisions of Rule 116

Applicants respectfully request entry of the above amendments under the provisions of 37 CFR 1.116 as the amendment merely reverts the claim language to language similar to that considered by the first Official Action in this case. In other words, no additional claims are offered (that haven't previously been of record in the case) and there are no new issues raised by the claim amendments.

Moreover, no further consideration by the Examiner is required, as these amended claims (and the original preliminarily amended claims) clearly define over all prior art of record.

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Applicants are of the belief that the originally filed and preliminarily amended claims may be successfully appealed to the Board of Patent Appeals and Interferences and the above amendment, if entered, revises the claim to the initial configuration examined by the Examiner (with minor modifications).

Accordingly, since the amended claims have already been considered by the Examiner, add no additional claims or issues requiring further consideration and/or search and are believed to place the application in proper condition for appeal, entry of these claims under the provisions of 37 CFR 1.116 is respectfully requested.

The claims distinguish over the cited prior art

The Court of Appeals for the Federal Circuit has noted in the case of *Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick*, 221 USPQ 481, 485 (Fed. Cir. 1984) that "[a]nticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim."

Applicants' claimed invention is a "variable optical attenuator device" and this is clearly set forth in the preamble of Applicants' claim. The Examiner's attention is directed to the Manual of Patent Examining Procedure (MPEP) Section 2111.02 entitled "Effect of Preamble." The Patent Office has adopted the advice provided in various Federal Circuit decisions cited in the MPEP. The MPEP specifically states "any terminology in the preamble that limits the structure of the claimed invention must be treated as a claim limitation."

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In the present case, the elements recited must be combined in a manner so as to provide a "variable optical attenuator device." As will be seen, neither the newly cited Jenkins patent nor the previously cited Devereux patent disclose a "variable optical attenuator device."

Additionally, the Jenkins and Devereux references do not provide a movable reflective element having an orientation which "determines the efficiency with which the optical beam is coupled into the second optical waveguide." Because neither of these structures and/or interrelationships are disclosed in the cited prior art, there can be no anticipation of claims 1-5, 13-16, 18, 24 and 26-29.

No disclosure of "variable optical attenuator device" in Jenkins or Devereux

Reviewing the related Jenkins and Devereux patents (the Jenkins patent is resultant from the US application claiming priority through PCT/GB97/00166 which in turn claims priority from GB Application No. 9601645.6 from which the Devereux patent issued), they disclose in their respective Figures 3, a "tunable mode converter 28." However, there is no disclosure that that the mode converter provides any attenuation of an output signal or could be modified to be a "variable optical attenuator device."

A review of the discussion of the Jenkins/Devereux device will show that a fundamental mode propagating in guide 320 towards mirror 350 is reflected from the mirror and coupled back into the guide 320. While the mode structure in Jenkins is altered slightly depending upon the tilt of the mirror 350, the total power is not affected, i.e., the signal is not attenuated. As a result, there can be no attenuation when the light exits and then re-enters waveguide 320.

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Figures 4 and 5 of Jenkins/Devereux show that the sum of the normalized moduli of the modes excited by the reflected light still add up to 1 for any given mirror tilt angle. While tilting of the mirror (a maximum mirror tilt of 10 milliradians equates to roughly $\frac{1}{2}$ of a degree) is enough to excite higher order modes, it quite clearly does not give rise to any attenuation. As a result, the Jenkins/Devereux references simply do not disclose or suggest a "variable optical attenuator device." Importantly, Jenkins and Devereux teach essentially constant power output (even though in differing order modes) and this teaching would lead one of ordinary skill in the art away from the creation of a variable optical attenuator device as claimed.

Accordingly, newly cited Jenkins and previously applied Devereux does not support any rejection of independent claim 1 and claims dependent thereon under 35 USC §102 as being anticipated.

No disclosure of a variable reflective element which "determines the efficiency with which the optical beam is coupled into the second optical waveguide" in Jenkins or Devereux

Applicants' independent claim 1, in addition to reciting a "variable optical attenuator device" in the preamble, also recites as one of the elements a "moveable reflective element." That element is arranged in conjunction with the first optical waveguide and the second optical waveguide so that "the orientation of the at least one moveable reflective element determines the efficiency with which the optical beam is coupled into the second optical waveguide." Those of ordinary skill in the art will clearly understand that the efficiency of the beam being coupled into the second optical waveguide is related to the attenuation, i.e., the less efficient the coupling the more attenuation of the optical beam.

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The above discussion of the Jenkins and Devereux references clearly establishes that neither Jenkins nor Devereux gives rise to attenuation of the optical beam. At best, the orientation of the mirror excites different order modes, but there is no disclosure of an any attenuation of the optical beam. Thus, the Jenkins/Devereux device specifically teaches away from any orientation of the moveable reflective element such that the orientation determines the efficiency with which the optical beam is coupled into the second optical waveguide.

The fact that the structure of Applicants' claimed "at least one moveable reflective element" and the claimed interrelationship (so as to "determines the efficiency with which the optical beam is coupled into the second optical waveguide") clearly establishes a different structural combination from that disclosed in Jenkins/Devereux. Because Jenkins/Devereux is a different combination of elements achieving a different purpose, it cannot support a rejection of independent claim 1 or claims dependent thereon under 35 USC §102.

Having responded to all objections and rejections set forth in the outstanding Official Action, it is respectfully requested that the Examiner indicate that claims 1-11 and 13-30 are in condition for allowance and notice to that effect is respectfully requested. In the event the Examiner is of the opinion that a brief telephone or personal interview will facilitate allowance of the claims, he is respectfully requested to contact Applicants' undersigned representative.

It is also respectfully requested that the Examiner contact Applicants' undersigned representative by telephone and confirm entry or non-entry of the above amendment so that Applicants may timely pursue an appeal in this case should one be necessary.

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Respectfully submitted,

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